Center Independent Research & Development: GSFC IRAD

Single Crystal Silicon Mirrors for Spaceflight

Completed Technology Project (2011 - 2013)

Project Introduction

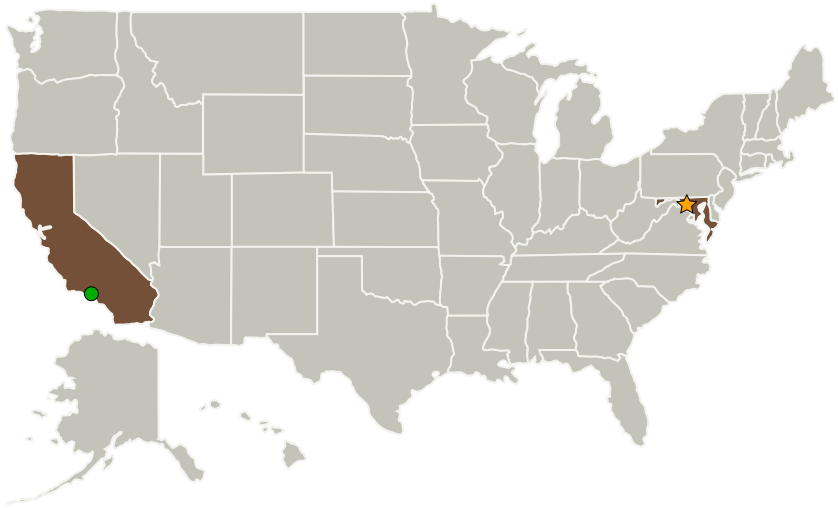
Single crystal silicon (SCSi) is both soft and brittle. This makes it difficult to machine. The primary obstacle for SCSi being accepted as a standard mirror material is well-developed optical manufacturing techniques. The objective is to improve the opto-mechanical design and fabrication of SCSi mirrors for spaceflight.

Develop a well understood process for manufacturing visible quality SCSi mirrors. Areas of research include stress relief, figure, finish, and light weighting techniques.

Anticipated Benefits

N/A

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
●Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

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Primary U.S. Work Locations	
California	Maryland

Project Website:

http://aetd.gsfc.nasa.gov/

Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Independent Research & Development: GSFC IRAD

Project Management

Program Manager:

Peter M Hughes

Project Manager:

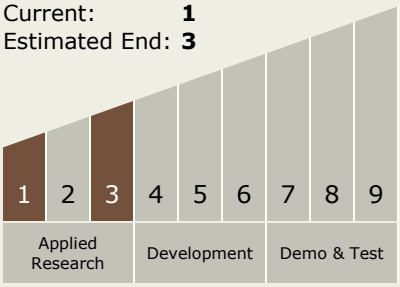
Terence A Doiron

Principal Investigator:

Peter C Hill

Technology Maturity (TRL)

Start: **1**
Current: **1**
Estimated End: **3**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.2 Observatories
    - TX08.2.1 Mirror Systems